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TOWNSEND and TOWNSEND and CREW LLP

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Srikanth Karimisetty et al.

Application No.: 10/731,604

Filed: December 8, 2003

For: METHOD AND SYSTEM FOR  
CREATING QUERIES THAT OPERATE  
ON UNSTRUCTURED DATA STORED  
IN A DATABASE

Confirmation No. 4746

Examiner: Jay A. Morrison

Technology Center/Art Unit: 2168

APPELLANTS' REPLY BRIEF UNDER  
37 CFR §41.41

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Commissioner:

Further to the Examiner's Answer mailed April 12, 2010 to Appellants' Appeal  
Brief, Appellants respectfully submit this Reply Brief under 37 C.F.R. §41.41.

## TABLE OF CONTENTS

1. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL.....	3
2. ARGUMENT .....	3
3. CONCLUSION.....	9

## **1. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1.1 Whether claims 1-3, 5, 11, 12, 14, 16, 17, and 19 are unpatentable under 35 U.S.C. § 103(a) over non-patent literature entitled “Integrating XML and Database” by Bertino et al. (hereinafter “Bertino”), in view of U.S. Patent Application Publication No. 2005/0091188 to Pal et al. (hereinafter “Pal), in further view of non-patent literature entitled “NoDoSE -- a tool for semi-automatically extracting semistructured data from text documents” by Adelberg (hereinafter “Adelberg”).

1.2 Whether claims 6, 7, 15, and 20 are unpatentable under 35 U.S.C. § 103(a) over Bertino, in view of Pal, in further view of Adelberg, and in further view of U.S. Patent No. 7,346,598 to Arora et al. (hereinafter “Arora”).

1.3 Whether claims 9 and 10 are unpatentable under 35 U.S.C. § 103(a) over Bertino, in view of Pal, in further view of Adelberg, and in further view of Arora.

1.4 Whether claim 8 is unpatentable under 35 U.S.C. § 103(a) over Bertino, in view of Pal, in further view of Adelberg, and in further view of U.S. Patent No. 6,856,970 to Campbell et al. (hereinafter “Campbell”).

## **2. ARGUMENT**

Applicants respectfully submit that a prima facie case of obviousness has not been established by the evidence presented in the Office Action. As reiterated by the Supreme Court in KSR International Co. v. Teleflex Inc. (KSR), 550 U.S. \_\_\_, 82 USPQ2d 1385 (2007), the framework for the objective analysis for determining obviousness under 35 U.S.C. § 103 is stated in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966). The factual inquiries enunciated by the Court are as follows:

(A) Determining the scope and content of the prior art;

(B) Ascertaining the differences between the claimed invention and the prior art;

and

(C) Resolving the level of ordinary skill in the pertinent art.

“To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

Applicants respectfully submit that Bertino, Pal, Adelberg, Arora, and Campbell, either individually or in combination, fail to disclose one or more of the claim limitations recited in each of claims 1-3, 5-12, 14-17, 19, and 20. These differences, along with other difference, establish that the subject matter as a whole of claims 1-3, 5-12, 14-17, 19, and 20 would not have been obvious at the time of invention to a person of ordinary skill in the art.

2.1 BERTINO, PAL, ADELBERG, ARORA, AND CAMPBELL, EITHER INDIVIDUALLY OR IN COMBINATION, DO NOT RENDER UNPATENTABLE CLAIMS 1-3, 5, 11, 12, 14, 16, 17, AND 19.

As referenced above, “[t]o support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

As explained further below, each of claims 1-3, 5, 11, 12, 14, 16, 17, and 19 recite at least one limitation that is not disclosed, either explicitly or inherently, or suggested by the combination of Bertino, Pal, Adelberg, Arora, and Campbell.

For example, independent Claim 1 recites a method of searching unstructured data stored in a database. As recited, a first graphical user interface is generated and displayed on a display device. As recited, the first graphical user interface is configured to enable users to designate elements in unstructured data stored in database tables in CLOB format as query elements. As recited, user input is received via the first graphical user interface. The recited user input identifies one or more elements in the unstructured data stored in CLOB format as

query elements. As recited, one or more queries on the unstructured data stored in CLOB format may be generated using the identified query elements.

The Examiner fails to support a conclusion that the claimed invention is directed to obvious subject matter. The combination of Bertino, Pal, Adelberg, Arora, and Campbell does not expressly or impliedly suggest the claimed invention. Moreover, the Examiner fails to present a convincing line of reasoning as to why a skilled artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

Specifically, the Examiner acknowledges on page 5 of the Final Office Action mailed February 13, 2009 and page 6 of the Examiner's Answer mailed April 12, 2010 that Bertino and Pal fail to disclose the limitations of "generating a first graphical user interface and displaying the first graphical user interface on a display device, the first graphical user interface configured to enable users to designate elements in the unstructured data as query elements" and "receiving user input via the first graphical user interface identifying one or more elements in the unstructured data stored in CLOB format as query elements" as recited in claim 1. The Examiner alleges in the Examiner's Answer that the disclosure in Adelberg of a GUI that allows a user to hierarchically decompose a document in combination with the teachings of Bertino and Pal renders the claimed invention obvious and therefore unpatentable. Appellants respectfully disagree.

As discussed previously, unstructured data takes the form of e-mails, documents, and other data that cannot be neatly stored in a database. For example, an e-mail may contain several relevant portions, such as sender ID, recipient ID, subject, and body that can be difficult to separate out due to how different e-mails may be formatted. Thus, when storing unstructured data in a database, an entire e-mail may be stored in CLOB format in the database. Even XML documents, while they may appear structured internally, are considered unstructured data, and therefore stored in CLOB format in the database.

The method of claim 1 enables a user to search within unstructured data stored in a database in CLOB format. As recited, a user can designate elements or portions in the unstructured data (e.g., XML tags) stored in CLOB format as query elements that can be used in traditional queries (e.g., SQL statements). Because native indexing offered by databases cannot

be used on unstructured data stored in CLOB format to get to information within, as recited in claim 1, an intermediate index is generated between each user created query element (e.g., those elements designated as being query elements and available for use in SQL statements) and its corresponding element in the unstructured data stored in CLOB format. As recited, the intermediate index allows queries against the unstructured data to be translated from their query elements (e.g., those created by the user) into the elements or portions in the unstructured data that were designated by the user.

While Adelberg would allow a user to use the disclosed GUI to hierarchically decompose a text document before being stored in a database, Adelberg does not disclose or suggest in combination with Bertino and Pal to create indexed query elements for unstructured data stored in CLOB format as recited in claim 1 with the disclosed GUI. In other words, the output of the GUI in Adelberg does not identify one or more elements in unstructured data stored in CLOB format as query elements as recited in claim 1. In particular, Adelberg discloses a tool (i.e., NoDoSE) having a graphical user interface (see page 7 of Adelberg, FIGS. 4 and 5) that enables a user to decompose a text document. In section 2.2., first paragraph, Adelberg outlines the process of decomposing text documents where the user loads a single text document into NoDoSE and hierarchically decomposes the text document using a GUI. Text documents of the same type can be loaded and automatically parsed based on the hierarchical decomposition, while the user uses the GUI to correct the automatic parsing. Thus, Adelberg merely discloses a tool having a GUI that enables a user to create a structure for otherwise unstructured text documents using the GUI.

The Examiner acknowledges on page 18 of the Examiner's Answer that the output of the GUI in Adelberg is a schema file. The Examiner then alleges that the schema file can be used to pull "the text from the user-selected portions" of a text document into a database. The Examiner further alleges that queries may be performed on these stored sections. However, Adelberg does not teach or suggest that the GUI is used to identify one or more elements in unstructured data stored in CLOB format as query elements as recited in claim 1. The line of reasoning presented in the Examiner's Answer simply implies that one of ordinary skill in the art would not use the invention as recited in claim 1 of identifying one or more elements in

unstructured data stored in CLOB format as query elements, but instead perform the decomposition process before storing any data in the database (e.g., remove the limitations of “storing unstructured data in a column of a database table in character large object (CLOB) format” from claim 1 and identifying elements in unstructured data stored in CLOB format as query elements) so that common SQL statements may then be used. Yet claim 1 is directed to allowing users to identify those elements in unstructured data stored in CLOB format as query elements and then use those elements in queries. The combination with Adelberg fails to disclose or suggest designating elements of unstructured data stored in CLOB format as query elements as recited in claim 1 because the suggested output of Adelberg from the GUI is to be used before storing the data in a database rather than on data already stored in CLOB format as recited.

Again, the Examiner fails to present a convincing line of reasoning as to why one of ordinary skill would have found the claimed invention to have been obvious in light of the teachings of the references. The Examiner states on page 5 of the Final Office Action mailed February 13, 2009, final paragraph, that it would have been obvious to combine Bertino, Pal, and Adelberg because using the recited limitations “would have given those skilled in the art the tools to improve the invention by bringing new data such as mail, code, documentation and other text within the reach of general query tools.” Appellants do not argue that being able to decompose documents utilizing the GUI in Adelberg would bring “new data such as mail, code, documentation and other text within the reach of general query tools.” This is because the decomposed portions of the unstructured data could then be extracted as disclosed in section 2.3 on page 6 of Adelberg and stored as traditionally expected in their respective columns of database tables to be “within the reach of general query tools.” As noted in the Examiner’s Answer, the schema file can be used to pull “the text from the user-selected portions” of a text document into a database. While this does provide “the advantage of being able to perform searches and indexing on data items which are not normally searchable” as suggest by the Examiner because text has not been extracted and stored in a database, this line of reasoning is insufficiently convincing to establish that the tool disclosed in Adelberg is applicable as alleged

to “identifying one or more elements in the unstructured data stored in CLOB format as query elements” as recited in claim 1.

Therefore, Appellants respectfully submit that Bertino, Pal, and Adelberg fail to disclose each and every claim limitation as recited in claim 1. Appellants further respectfully submit that none of the cited references cure the above-discussed deficiencies of Bertino, Pal, and Adelberg, and thus, claim 1 is allowable over the cited references.

Appellants respectfully submit that independent claims 9, 11, and 16 are allowable for at least a similar rationale as discussed above for the allowability of claim 1, and others. Appellants respectfully submit that the dependent claims that depend directly and/or indirectly from independent claims 1, 9, 11, 16 respectively, are also allowable for at least a similar rationale as discussed above for the allowability of the independent claims. Appellants further respectfully submit that the dependent claims recite additional features that make the dependent claims allowable for additional reasons.

2.2 BERTINO, PAL, ADELBERG, ARORA, AND CAMPBELL, EITHER INDIVIDUALLY OR IN COMBINATION, DO NOT RENDER UNPATENTABLE CLAIMS 6, 7, 15, AND 20.

For at least a similar rationale as discussed above for the allowability of claim 1, Appellants respectfully submit that dependent claims 6, 7, 15, and 20 are also allowable.

2.3 BERTINO, PAL, ADELBERG, ARORA, AND CAMPBELL, EITHER INDIVIDUALLY OR IN COMBINATION, DO NOT RENDER UNPATENTABLE CLAIMS 9 AND 10.

For at least a similar rationale as discussed above for the allowability of claim 1, Appellants respectfully submit that dependent claims 9 and 10 are also allowable.

2.4 BERTINO, PAL, ADELBERG, ARORA, AND CAMPBELL, EITHER INDIVIDUALLY OR IN COMBINATION, DO NOT RENDER UNPATENTABLE CLAIM 8.



For at least a similar rationale as discussed above for the allowability of claim 1, Appellants respectfully submit that dependent claim 8 is also allowable.

### **3. CONCLUSION**

For these reasons, it is respectfully submitted that the rejections should be reversed. Appellants further respectfully request that a notice of allowance be issued indicating the allowability of claims 1-3, 5-12, 14-17 and 19-20.

Respectfully submitted,

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